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A Study of the Relationships Between Primary Grade Pupils Labeled As Either Culruarlly Disadvantaged or Culturally Advantaged and Their Development of Certain Language Skills.

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A study was made of the interrelationships among the language skill complex (auditory discrimination, articulation of speech sounds, recognition vocabulary, and vocabulary of use), grade level, intelligence level, race, sex, father's occupation, school, chronological age, and general reading ability of children placed in the primary grades with respect to their cultural index. Three hundred and twenty-two primary-grade children from two elementary schools in Durham County, North Carolina, served as subjects. One school enrolled a predominantly disadvantaged population; the other school enrolled a predominantly advantaged population. Test data were analyzed through variance and covariance techniques of multiple linear regression. Significant differences in auditory discrimination and its relationship to the cultural index could not be attributed to differences in race, sex, father's occupation, school, chronological age, or general reading ability. Articulation of speech sounds was dependent upon grade and the combined factors of grade and chronological age. Recognition vocabulary was dependent upon grade, grade and age combined, intelligence, and general reading ability. Grade, sex, grade and chronological age combined, general reading ability, and intelligence were significant factors for the development and utilization of vocabulary of use. References are included. (Author/CM)

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A STUDY OF THE RELATIONSHIPS BETWEEN PRIMARY GRADE PUPILS LABELED AS EITHER CULTURALLY DISADVANTAGED OR CULTURALLY ADVANTAGED AND THEIR DEVELOPMENT OF CERTAIN LANGUAGE SKILLS [1]

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RE 001 628

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INTRODUCTION

When one views the various projects presently in operation for disadvantaged children, he soon finds that there is a singular lack of identifiable characteristics of them. Selection of children for these programs is generally based on the broad subjective criteria of living in a depressed geographic location, being a member of a minority ethnic division, possessing a low socio-economic status, showing verbal deficiencies, and experiencing a lack of academic success in the school situation. Yet, one often finds reports indicating that characteristics of these children range from the very slow and dull to the intellectually gifted and creative. Selection on this basis alone seems inadequate for an effective educational program.

One of the common goals in good educational planning and teaching of children is to identify their specific strengths and weaknesses and then to plan and teach according to their needs. The commonality of this goal is also applicable to the teaching of the disadvantaged.

The purpose of this investigation was to study the interrelationships among the language skill complex (auditory discrimination, articulation of speech sounds, recognition vocabulary, and vocabulary of use), grade level, intelligence level, race, sex, father's occupation, school, chronological

age, and general reading ability of children placed in the primary grades with respect to their cultural index. Specifically, the procedures for this study included the following:

1. After the most common language skills at the primary grade level had been determined by a survey of the literature, typical tests which purported to measure language skills at the primary grade level were selected, administered, and interpreted. The test data were collected and subjected to analysis. Computerized analysis was accomplished through the variance and covariance techniques of multiple linear regression.

2. Three hundred and twenty-two primary-grade children from two elementary schools in Durham County, North Carolina were utilized as the population sample for this study. One school was classified as having enrolled a predominantly disadvantaged population, while the other was categorized as having enrolled a predominantly advantaged population.

DEFINITION OF TERMS AND CONSTRUCTS

Language skill complex was defined as those skills which refer to the verbal mediators one uses in communicating to others the results of his thought processes, that are regarded as "standard" English and prerequisities for academic success in the schools. As such, the construct includes auditory discrimination, articulation of speech sounds, recognition vocabulary, and vocabulary of use.

Auditory discrimination was defined as the "recognizing and distinguishing between the sounds represented by different letters and groups of letters."

Articulation was defined as the ability of children to produce standard English sounds correctly in words. The standard English sounds consist of consonant sounds in the initial, medial, and final positions; double-consonant blends; triple-consonant blends; vowels and diphthongs.

Vocabulary of recognition was defined as those words that are recognized or understood when heard or read.

Vocabulary of use was defined as those words that are actually produced or used in oral and written speech.

Cultural index was defined as the subjective identification of children by their teachers as either culturally disadvantaged or advantaged.

Culturally disadvantaged was defined as those primary grade-level children who were subjectively labeled as such by teachers.

Culturally advantaged was defined as those primary grade-level children who were subjectively labeled as such by their teachers.

TECHNIQUES AND PROCEDURES

1. The population sample for this investigation was selected from the student bodies of two schools (an elementary and a union) of the Durham County, North Carolina public school system. Three hundred and twenty-two children, almost equally divided as to sex, were examined for the study, These children were drawn from all of the first-, second-, and third-grade classrooms in the two schools.

Final selection of children was based on an obtained range of abilities in reading achievement, the development and utilization of the language skill complex, and intelligence. That is, since the primary focus of this study was on the inter-relationships among the language skill complex, grade level, intelligence level, race, sex, father's occupation, school, chronological age, and general reading ability of children placed in the primary grades with respect to their cultural index, the above information was obtained in order to assure that the children studied represented the entire reading achievement, intellectual level, and linguistic range. The main criterion utilized was the language skill complex (auditory discrimination, articulation of speech sounds, recognition vocabulary, and vocabulary of use). Test were selected at each grade level for each facet of the language

skill complex. Consequently, each child was administered a total of six tests.

2. Specifically, children in the two schools were initially given the Institute for Personality and Ability Testing (IPAT) Culture Fair (or Free) Intelligence Test, Scale 1 for ages 4 - 8, and the Culture Fair Intelligence Test, Scale 2, ages 8 - 13 Forms A and B, to all third-grade children who were nine years old; the Gates-MacGinitie Reading Tests, Form 1 - Primary A Grade one; Primary B Grade two; and Primary C Grade three; Wepman's Auditory Discrimination Test, Form 1; the Templin-Darley Test of Articulation; and the Seashore-Eckerson English Recognition Vocabulary Test, for First, Second, and Third Grades, as modified by M. K. Smith. Four open-ended questions were utilized to secure a sample of verbal responses.

The sample studied may be regarded as a representative sample of primary grade populations. Children in the sample fell across the entire range of intelligence levels, ages, grade levels, race, sex, reading achievement levels, socio-economic levels, and the cultural index. Generalizations to these populations then seem appropriate. A listing of the means and standard deviations of the total population on all variables is shown in Table 1.

Table 1. Listing of the Means and Standard Deviations of the Total Population on all Variables

Variables	Mean	SD
1. Grade I	.37	.48
2. Grade II	.38	.48
3. Grade III	.25	.43
4. Male	.49	.50
5. Female	.51	.50
6. Caucasian	.65	.48
7. Negroid	.35	.47
8. School A	.34	.47
9. School B	.66	.47
10. Socio-economic status	3.49	2.24
11. Chronological age	95.26	12.2
12. Culture fair IQ	134.44	30.50
13. SRA-PMAT or Kuhlman-Anderson IQ	103.28	14.96
14. Reading (vocabulary)	2.81	1.59
15. Reading (comprehension)	2.83	1.61
16. Average reading	2.85	1.58
17. Auditory discrimination (X score)	21.12	5.82
18. Auditory discrimination (Y score)	8.80	1.62
19. Articulation of speech sounds	49.47	1.55
20. Recognition vocabulary (corrected score)	13.09	8.52
21. Recognition vocabulary (uncorrected score)	40.77	13.92
22. Vocabulary of use	28.47	10.27
23. Culturally disadvantaged	.33	.47
24. Culturally advantaged	.67	.47
25. Unit vector	1.00	.00

DESIGN, ANALYSIS, RESULTS AND CONCLUSIONS

This study was designed so that the analysis of the data could be accomplished through the variance and covariance techniques of multiple linear regression as described by Bottenberg and Ward.

Such an analysis utilizes criterion and preditor variables in Full and Restricted Regression Models. The criterion variables were the individual scores on the language skill complex test. Each criterion gave a Full Regression Model.

The predictor variables included grade, sex, race, age, school, socio-economic status, intelligence scores, general reading ability (vocabulary and comprehension), and the cultural index. These variables are specified as factors in the subordinate hypothesis.

The six Full Regression Models and their necessary characteristics are listed in Table 2 on page 8. This table indicates that for each Full Model fifteen Restricted Models are listed, each of which was generated from a hypothesis to be tested. The first Restricted Model is used to test the subordinate hypothesis about the cultural index, one of the nine secondary variables, and about the combined effect of the cultural index and other predictor variables. This procedure is repeated for each of the nine variables. Thus, there is a primary Restricted Model and nine pairs of sub-

Table 2. Analyses of the Effects of Criterion Variance of Auditory Discrimination, Articulation of Speech Sounds, Recognition Vocabulary, and Vocabulary of Use on Variables of Cultural Index, Grade, Sex, Race, School, Socio-Economic Status, Chronological Age, IQ, Vocabulary and Reading Comprehension.

Variables	AD			ASS		
	RSQ*	F**	***	RSQ*	F**	***
1. All variables except cultural index	.1357	.0000		.1231	.2196	
2. All variables except grade divisions	.1283	1.9526		.1084	4.0729	*
3. All variables except sex	.1325	.8328		.1167	1.8964	
4. All variables except race	.1357	.0000		.1240	.0000	
5. All variables except school	.1341	.4142		.1239	.0194	
6. All variables except socio-economic status	.1336	.5552		.1121	3.1185	
7. All variables except chronological age	.1293	1.6961		.1232	.1912	
8. All variables except grade divisions and CA	.1015	3.0274	*	.0914	2.8448	*
9. All variables except culture fair IQ	.0952	10.7620	*	.1240	1.6649	
10. All variables except SRA-PMAT or Kuhlman-Anderson IQ	.1333	.6339		.1239	.0191	
11. All variables except culture fair and SRA-PMAT or Kuhlman-Anderson IQ	.0759	7.9530	*	.1159	1.0952	
12. All variables except reading vocabulary	.1281	2.0046		.1231	.2273	
13. All variables except reading comprehension	.1269	2.3358		.1226	.3589	
14. All variables except reading vocabulary and reading comprehension	.1256	1.3335		.1227	.3589	
15. All variables except culture fair, SRA-PMAT or Kuhlman-Anderson, reading vocabulary and reading comprehension	.0639	4.7765	*	.1138	.6694	

*Squared Multiple Correlation Coefficients. Equal to the ratio of the criterion variance accounted for by the prediction system.

**F Test as described by Bottenberg and Ward (1963, ch. 2)

***Starred variables indicate significance at the .05 level of confidence.

Table 2 (continued). Analyses of the Effects of Criterion Variance of Auditory Discrimination, Articulation of Speech Sounds, Recognition Vocabulary, and Vocabulary of Use on Variables of Cultural Index, Grade, Sex, Race, School, Socio-Economic Status, Chronological Age, IQ, Vocabulary and Reading Comprehension.

Variables	RV			V of U		
	RSQ*	F**	***	RSQ*	F**	***
1. All variables except cultural index	.7456	.0000		.4866	.0000	
2. All variables except grade divisions	.7368	7.9740	*	.4445	18.8698	*
3. All variables except sex	.7451	.4974		.4646	9.8730	*
4. All variables except race	.7456	.0000		.4866	.0000	
5. All variables except school	.7454	.1666		.4861	.2579	
6. All variables except socio-economic status	.7421	3.1662		.4841	1.1534	
7. All variables except chronological age	.7456	.0000		.4843	1.0260	
8. All variables except grade divisions and CA	.7244	6.4025	*	.4308	8.3405	*
9. All variables except culture fair IQ	.7423	2.9839		.4844	1.0222	
10. All variables except SRA-PMAT or Kuhlman-Anderson IQ	.7392	5.7738	*	.4866	.0000	
11. All variables except culture fair and SRA--PMAT or Kuhlman-Andersin IQ	.7287	7.6491	*	.4836	.6898	
12. All variables except reading vocabulary	.7272	16.6347	*	.4566	13.4429	*
13. All variables except reading comprehension	.7438	1.6030		.4851	.7013	
14. All variables except reading vocabulary and reading comprehension	.6721	33.2327	*	.4322	12.1857	*
15. All variables except culture fair, SRA-PMAT or Kuhlman-Anderson, reading vocabulary and reading comprehension	.5933	34.4272	*	.4235	7.0733	*

*Squared Multiple Correlation Coefficients. Equal to the ratio of the criterion variance accounted for by the prediction system.
**F Test as described by Bottenberg and Ward (1963, ch. 2)
***Starred variables indicate significance at the .05 level of confidence.

ordinate Restricted Models for a total of nineteen.

The hypotheses, results, and conclusions are as follows.

Primary Null Hypothesis

The development and utilization of the total language skill complex (auditory discrimination, articulation of speech sounds, recognition vocabulary, and vocabulary of use) will not differ significantly between groups of primary grade-level children who have been subjectively labeled by their teachers as either culturally disadvantaged or advantaged. Results indicate that the hypothesis could not be rejected for the development and utilization of the total language skill complex. It was concluded that significant differences in the development and utilization of the total language skill complex could not be traced to differences among primary-grade level children who were subjectively labeled by their teachers as either culturally disadvantaged or advantaged.

Subordinate Null Hypothesis

The subordinate hypothesis dealt with the premise that any relationship between the development and utilization of the language skill complex by primary grade-level children is not dependent on factors of or on the combined effect of:

a. Grade level

b. Intelligence level

c. Race

d. Sex

e. Father's occupation[1]

f. School

g. Chronological age

h. General reading ability

i. Cultural index (subjective identification of children by their teachers as either culturally disadvantaged or advantaged)

The assumption that auditory discrimination is not affected by grade division, chronological age, and intelligence level was rejected at the five per cent confidence level insofar as the total language skill complex of primary grade-level children is concerned. It was concluded that significant differences in auditory discrimination and its relationship, if any, to the cultural index could not be attributed to differences in race, sex, father's occupation, school, chronological age, and general reading ability.

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[1] W. L. Warner, M. Meeker, and K. Eells, Social Class in America, (New York: Harper and Row, Publishers, 1960), pp. 140-41. According to these authors the father's occupation is a social index for determining socio-economic status. For this reason the father's occupations were obtained for all of the children used in the study. Each occupation was given a number corresponding to its category as determined on the basis of research conducted by Warner, Meeker, and Eells.

Results indicated that articulation of speech sounds is dependent upon grade, and the combined factors of grade and chronological age. No other variables were significant. Results also indicated that recognition vocabulary is dependent upon grade, the combined factors of grade and age, intelligence level, and general reading ability. It was concluded that differences in the development and utilization of recognition vocabulary between culturally disadvantaged and advantaged children could not be attributed to factors of sex, race, socio-economic status, cultural index, and school.

Results also indicated that grade, sex, the combined factors of grade and chronological age, general reading ability, and intelligence level are significant factors for the development and utilization of vocabulary of use.

IMPLICATIONS

These data provide implications for reading theory and practice.

1. The study indicates that when a number of variables are controlled, the total language skill complex of primary grade-level children is not appreciably affected by the subjective identification of children by their teachers as either culturally disadvantaged or advantaged. Consequently, the results question whether the subjective labeling of primary grade-level children as either culturally disadvantaged or advantaged should be the major criterion utilized in assessing

the development and utilization of the fundamental language skills for children in this age range as is currently the vogue?

2. Do any of the language skills measured in the primary grades function more strongly with respect to language development in the intermediate grades? If any of these skills are found to be related to the total language skill complex above the primary grade level, this finding may be interpreted as evidence that as children become older cultural differences become more prominent.

3. It was found that grade division and chronological age are significant factors for auditory discrimination. Does this finding mean that more stress and emphasis should be placed on discriminatory exercises in the classrooms for the grades utilized in this investigation?

4. Grade division and chronological age were of use in predicting articulation of speech sounds of primary grade-level children. This finding raises the question of whether less frequently used language skills would be better predictors of articulation of speech sounds?

5. It appears that recognition vocabulary is primarily affected by variables of grade, intelligence level, general reading ability, and the combined factors of grade and chronological age. This finding implies that the variables

of general reading ability, grade, intelligence level, and the combined factors of grade and chronological age are significant predictors of recognition vocabulary.

6. The sixth implication suggests that grade, sex, the combined factors of grade and chronological age, general reading ability, and intelligence level are significant predictors of vocabulary of use. Does this finding suggest socio-economic status and school (in addition to variables used in the preceding) are not significant factors as one might assume them to be?

7. Because the results of this study were interpreted in terms of the variables and instruments used in the study, the subject of the investigation might also be constructively approached with other combinations of predictor variables and sets of instruments.

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